APPENDIX C

Environmental Conditions Summary
Cornerstone Earth Group

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600 National Avenue Office Project
Initial Study/Mitigated Negative Declaration

City of Mountain View

CORNERSTONE EARTH GROUP

Date:	November 7, 2013
Project No.:	118-49-1
Prepared For:	Ms. Judy Fenerty **DAVID J. POWERS & ASSOCIATES** 1871 The Alameda, Suite 200 San Jose, CA 95126
Re:	401, 600, 630 and 640 National Avenue Mountain View, California

Dear Ms. Fenerty:

Per your request, this letter summarizes the previous environmental work performed at 401, 600, 630 and 640 National Avenue (Site) in Mountain View (City), California (Figures 1, 2 and 3). We understand that the Developer is proposing to develop the Site with a four story R&D / office facility (approximately 138,000 square feet), a parking deck (190 stalls), surface parking (276 stalls) and landscaping.

Location, Description and Use

The Site is primarily located within an area of mixed commercial and industrial use; it also is located in the Middlefield-Ellis-Whisman (MEW) Superfund Study Area, which has documented releases of volatile organic compounds (VOCs) to soil, soil vapor and ground water from three Superfund sites (also call National Priority List (NPL) sites). Table 1 describes the physical location and use of the Site.

Table 1. Location and Use

Address	APN	Zoning	No. of Buildings	Building Size (sq. ft.)	Land Acreage	Date of Construction	Regulatory Oversight
401 National Ave.	160-54-011	ML (Limited Industrial)	One	12,520	1.94	1970	US EPA – NPL, Former Fairchild Building 9 Water Board – MEW NPDES
612, 614, 616, 618 and 620 National Ave.[1]	160-54-010	ML (Limited Industrial)	One	16,500	1.04	1964	---
630 National Ave.	160-54-009	ML (Limited Industrial)	One	18,000	0.92	1964	Voluntary Cleanup Agreement between Odevco and DTSC – No Further Action
640 National Ave.	160-54-008	ML (Limited Industrial)	One	15,000	0.92	1964	---

1. Collectively referred to as 600 National Avenue

Documents Reviewed

This letter briefly summarizes selected information obtained from the following reports:

- CalEPA, 2010. Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties, January 2005, updated September 2010.
- DTSC, October 22, 2013. PEA Approval Letter, 630 National Avenue, Mountain View, California.
- McCloskey Consultants, October 8, 2013. Preliminary Endangerment Assessment, 630 National Avenue.
- Partner Engineering and Science, Inc., March 18, 2013 and updated October 15, 2013. Draft Phase I Environmental Site Assessment Report, 630 National Avenue, Mountain View, California 94043.
- Partner Engineering and Science, Inc., March 12, 2013. Draft Phase I Environmental Site Assessment Report, 612 – 620 National Avenue, Mountain View, California 94043.
- Partner Engineering and Science, Inc., March 18, 2013. Draft Phase I Environmental Site Assessment Report, 640 National Avenue, California 94043.
- San Francisco Bay Regional Water Quality Control Board, May 2013. Environmental Screening Tables.
- Schlumberger Technology Corporation, April 13, 2012. 2011 Annual Progress Report – Former Fairchild Building 9, Middlefield-Ellis-Whisman ("MEW") Area, Mountain View, California.
- Scott, 1991. *Background Metal Concentrations in Soils in Northern Santa Clara County, California.*
- US EPA Region 9, September 2009. Final Second Five-Year Review Report for Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California.
- US EPA Region 9, August 16, 2010. Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California.
- US EPA Region 9, November 2012. Regional Screening Level (RSL) Summary Table.
- Weiss Associates, June 10, 2011. 2010 Annual Progress Report for Former Fairchild Building 9, 401 National Avenue, Middlefield-Ellis-Whisman Study Area, Mountain View, California.

For complete details, please refer directly to the original reports.

Middlefield-Ellis-Whisman (MEW) Superfund Study Area

The Site is located in the Middlefield-Ellis-Whisman (MEW) Superfund Study Area; the MEW Superfund Study Area is named for the three streets that generally bound the source areas of contamination: Middlefield Road, Ellis Street, and Whisman Road. The MEW Superfund Study Area includes three Superfund sites: Fairchild Semiconductor Corporation (EPA ID CAD095998778); Raytheon Company (EPA ID CAD009205097); and Intel Corporation (EPA ID CAD061620217); several other facilities; and portions of the former Naval Air Station (NAS) Moffett Field Superfund site. One of the Site properties (401 National Avenue) is part of the Fairchild Semiconductor Corporation Superfund site (Building 9).

US EPA is the lead regulatory agency responsible for directing the cleanup process under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the MEW Superfund Study Area. The U.S. Navy is the lead agency for the cleanup at NAS Moffett Field. The San Francisco Bay Regional Water Quality Control Board (Water Board) is the support regulatory agency.

The MEW Superfund Study Area includes two areas: an approximately ½ square mile Local Study Area within and along East Middlefield Road, Ellis Street, North Whisman Road, and U.S. Highway 101 (Bayshore Freeway); and a broader, approximately 8 square mile Regional Study Area, which includes the Local Study Area, the former Naval Air Station Moffett Field (an NPL site), and the National Aeronautics and Space Administration (NASA) Ames Research Center..

The individual companies responsible for investigating and remediating soil and ground water at their respective facilities are collectively referred to as the MEW Companies. The MEW Companies include: Fairchild Semiconductor Corp, Raytheon Company, Intel Corp., Schlumberger Technology Corp (Schlumberger), NEC Electronics America, Inc. (NEC), SMI Holding LLC (SMI), Vishay General Semiconductor (Vishay), Sumitomo Mitsubishi Silicon America (SUMCO), National Semiconductor Corporation, Tracor X-Ray, and Union Carbide. National Semiconductor Corporation, Tracor X-Ray, and Union Carbide are not involved with the active investigation and remediation of the MEW (Figure 3).

In the 1960s and 1970s, several industrial companies involved in the semiconductor, electronics, and other manufacturing and research contaminated the soil and ground water with VOCs, primarily the chemical trichloroethene (TCE). The MEW Companies responsible for the soil and ground water contamination no longer own or operate the former facilities. Several of the original buildings within the MEW Superfund Site Area have been demolished. The current tenants occupying the buildings overlying the TCE ground water plume South of U.S. Highway 101 were not operating at the time of the contaminant releases to the environment and are not involved with the investigation and cleanup program.

Each individual MEW Company, the Navy, and NASA are responsible for investigation, cleanup, and source control for soil and ground water contamination at their individual facility-specific properties. Contaminated ground water that has bypassed the source control areas and has mixed together with other contaminated ground water from other source areas is considered part of the regional ground water contamination plume, or the “regional plume.” Figure 4 shows the regional TCE shallow ground water contamination plume for the MEW and the Vapor Intrusion Study Area.

Fairchild, Raytheon, and Intel implemented source control measures in the 1980s, before the final remedy was selected. Based on extensive soil and ground water investigations and

studies at the MEW Superfund Study Area, the MEW Companies implemented soil and ground water remediation programs that included soil excavation and treatment, installation of four slurry walls, soil vapor extraction (SVE) and treatment systems, and ground water extraction and treatment systems. In the mid-1990s, Fairchild, Raytheon, Intel, and other MEW Companies (SMI, Vishay/SUMCO, NEC) implemented the soil remedy by excavation and aeration and SVE. They also began operating or continued to operate the ground water extraction and treatment systems to control source areas and remove VOCs from the ground water aquifers. The soil cleanup was completed in 2001. Areas where soil cleanup was implemented are shown on Figure 5.

In accordance with the Consent Decree and 106 Order, each of the MEW Companies operates and maintains individual facility-specific ground water source control measures (i.e., extraction wells, slurry walls, etc.) to contain and clean up contamination source areas in each area for which the MEW Company is responsible. The two MEW Regional Program ground water extraction and treatment systems south and north of U.S. Highway 101 and the Navy's West-Side Aquifers Treatment System (WATS) began operations in 1998 and continue. NASA's ground water extraction and treatment system began operation in 2001 and continues. The locations of the facility-specific source control and Regional Program extraction wells and ground water treatment systems south of U.S. Highway 101 are shown on Figures 6 and 7. Ongoing ground water cleanup activities at the MEW Superfund Study Area are performed according to specifications in the individual facility-specific and Regional Program design, construction, and operations and maintenance (O&M), and monitoring, documents. Several of the ground water treatment systems discharge to Stevens Creek under facility-specific National Pollutant Discharge Elimination System (NPDES) permits.

A baseline human health risk assessment for the MEW Site is summarized in the 1988 *Endangerment Assessment for the Middlefield-Ellis-Whisman Site in Mountain View, California* (Endangerment Assessment). The exposure pathways that were evaluated in the Endangerment Assessment used exposure assumptions that were considered both conservative and reasonable in evaluating risk at that time. The Endangerment Assessment evaluated the potential for future exposure to contamination if the ground water and its contaminant sources were left untreated and if that water was used for domestic purposes (e.g., drinking, showering, washing). Although ground water at the MEW Site is not currently used for drinking water or other domestic purposes, cleanup actions are being taken at the Site to restore ground water to its potential beneficial use as a potable drinking water source. At the time, the Endangerment Assessment concluded that potential exposure to Site contaminants through the inhalation pathway presented negligible risks, and no Remedial Action Objectives for mitigating the subsurface vapor intrusion pathway were developed. Therefore, the 1989 ROD did not address potential long-term exposure risks from TCE and other chemicals of concern through the vapor intrusion pathway.

Since the issuance of the 1989 Record of Decision (ROD), new information has been developed regarding the toxicity of TCE as well as the potential for vapor intrusion into buildings overlying shallow ground water contamination. US EPA has determined that the vapor intrusion response actions selected in this ROD Amendment are necessary to protect the public health of building occupants in the Vapor Intrusion Study Area from actual or threatened releases of hazardous substances into the environment via the subsurface vapor intrusion pathway.

US EPA's selected remedy to address the vapor intrusion pathway and the protection of human health of building occupants in the Vapor Intrusion Study Area consists of the following:

- For Existing Buildings - The appropriate response action is determined by indoor air sampling and other lines of evidence for each building. If necessary, installation, operation, maintenance, and monitoring of an appropriate Sub-slab/Sub-membrane Ventilation System.

- Alternative for Existing Commercial Buildings - Use of building's Indoor Air Mechanical Ventilation System if the property/building owner agrees to use, operate, and monitor the system to meet remedy performance criteria and the remedial action objectives.

- For Future (New Construction) Buildings – Installation of a Vapor Barrier and Passive Sub-slab Ventilation System (With the Ability to be Made Active).

- Implementation of Institutional Controls (ICs) and Monitoring to Ensure the Long-term Effectiveness of the remedy.

The amendment to the ROD for the vapor intrusion pathway was issued in August 2010.

Hydrogeology

The Site is located within the northern portion of the Santa Clara Valley Ground Water Sub-basin, the northernmost of three interconnected ground water basins within Santa Clara County. The ground water flow direction is northerly, toward the San Francisco Bay, and generally sub-parallel to the ground slope. The hydrostratigraphy in this part of the sub-basin is divided into upper and lower water bearing zones, separated by a regional aquitard. The upper water-bearing zone is subdivided into two water-bearing zones: the A Zone (approximate depth of 20 and 45 feet) and the B Zone (approximate depth of 50 and 160 feet), which are separated by the A/B aquitard. The B Zone is subdivided into three zones (B1-, B2-, and B3 Zones). The lower water-bearing zone occurs below a depth of approximately 200 feet. The lower water bearing zone is subdivided into the C Zone (which extends to an approximate depth of 240 feet) and the Deep Zone. The aquitard separating the upper and lower water-bearing zones is represented as the B/C aquitard and is the major confining layer beneath the Site.

Although the direction of ground water flow at the MEW Superfund Study Area is generally to the north, the construction of underground slurry walls and operation of groundwater extraction wells have altered the direction of ground water flow in certain locations (e.g., the groundwater may flow to the west or east around slurry walls).

401 National Avenue (Former Building 9)

401 National Avenue (401 National) was farmland from at least 1939 to 1956; vacant land in 1956; and developed with the existing structure (Fairchild's Building 9) by 1970. Building 9 functioned as a facility for receiving, mixing, and delivering chemicals for Fairchild from 1966 to 1987. The most recent tenant was Adema Technologies who reportedly utilized the facility for growing crystals for photovoltaic systems and warehousing.

401 National is part of a joint source control responsibility of Vishay General Semiconductor (formerly General Instrument Corporation), Sumitomo Mitsubishi Silicon America (formerly Siltec Corporation), and Fairchild. The remedy consists of ground water extraction and treatment. The remedy is designed to protect local water supplies and to remediate or control ground water that contains elevated concentrations of chemicals, including control of discharge of such ground water to surface water. Ground water cleanup goals are 5 micrograms per liter (µg/L) for TCE in

shallow groundwater (A- and B- zones) and 0.8 µg/L for TCE in deep ground water (C and Deep Zones). Soil cleanup standards for the MEW Area are 0.5 milligrams per kilogram (mg/kg) of TCE for soils outside of the slurry wall and 1 mg/kg TCE for soil inside the slurry wall. The ROD states that the chemical ratio of TCE to other chemicals found at the Site is such that achieving the cleanup goal for TCE will result in cleanup of the other Site chemicals to at least their respective federal maximum contaminant levels (MCLs).

Cleanup has been addressed in two stages: initial actions and a long-term remedial phase (US EPA, 1989). Initial cleanup actions included tank removals, well sealing, soil removal and treatment, slurry wall construction, and local ground water extraction and treatment. The Site is in the long-term remedial phase, which consists of extraction and treatment of ground water by air stripping towers or liquid-phase granular activated carbon (GAC).

As part of the initial stage, in 1986, Fairchild installed a subsurface slurry wall at Building 9, which is approximately 40 feet deep, 3 feet thick and keyed a minimum of 2 feet into the A/B1 aquitard. Ground water extraction began at this property in 1982 from well 65A. Since then, the ground water system has been expanded to include four source control extraction wells within the slurry wall enclosure (AE/RW-9-1, AE/RW-9-2, RW-20A, and RW-21A). Extracted ground water from the four A Aquifer wells is treated at System 1. Three other source control extraction wells (GSF-1A, GSF-1B1, and GSF-1B2) have also been installed north of this facility and are the joint responsibility of Vishay/SUMCO and Fairchild/Schlumberger.

401 National is currently subject to the General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from Cleanup of Ground Water Polluted by Volatile Organic Compounds (the Permit) adopted by the Water Board, dated August 12, 2009 (Permit No. CAG912003, Water Board Order No. R2-2009-0059). 401 National received authorization to operate under the Permit in a letter from the Water Board dated November 29, 2004, and has been discharging under the Permit since January 1, 2005. Prior to January 1, 2005, 401 National was subject to a sanitary sewer discharge permit issued by the City on April 6, 2004. The Permit requires the submittal of quarterly reports that summarize data collected from the site's GETS and provide a compliance evaluation summary. Currently, ground water extracted from the Site is conveyed via double-contained piping to an off-Site treatment facility located at 515 Whisman Road (System 1), which consists of three 5,000-pound GAC vessels in series. Progress of the remediation during this phase is tracked by ground water monitoring of extraction and monitoring wells on Site.

Fourteen monitoring wells are used to evaluate ground water quality at 401 National. Thirteen of the monitoring wells are in the A-zone, and one monitoring well is located in the B1-zone. Water levels are measured quarterly in four slurry wall well pairs (eight wells) and semi-annually in other monitoring wells, and water quality samples are collected annually in eight of the 14 monitoring wells. Wells 35A and 122A located inside the slurry wall are sampled once every five years and were last sampled in 2007. Monitoring wells 69B1, 123A, 126A, and 138A are not part of the water quality sampling program; they are used to assess horizontal and vertical gradients at the Building 9 slurry wall. Chemical concentration trends in 401 National wells within and down-gradient of the slurry wall indicate generally stable or declining concentrations over time as indicated by inspection of concentration-time plots. Current concentrations are below historical VOC concentrations for this area, and TCE isopleths indicate an overall reduction in VOC magnitude.

Soil cleanup actions in the initial stage included in-situ vapor extraction with treatment by vapor-phase GAC, and excavation with treatment by aeration. In 1995, 3,000 cubic yards of soil were excavated to a depth of 6 feet and aerated at the 401 National Avenue. A soil vapor extraction

(SVE) system operated from 1996 to 1997 to remediate soil from an approximate depth of 6 feet to 1½ feet above the water table. Soil samples collected after the SVE system was shut down showed that soils had reached the cleanup standards both inside and outside the slurry walls in the MEW Area (Locus, 1997; Smith, 1997a; and Smith, 1997b). All soil remediation at the MEW Area was completed by 2001 (US EPA, 2009).

Based on the Phase I ESA (Partner 2013), one Recognized Environmental Condition (REC) was reported:

- 401 National is located in the MEW Study Area.

The Phase I ESA did not reveal historical RECs. However, the following environmental "issues" were noted:

- Multiple empty 55-gallon drums and several containers of motor oil and automotive fluids were observed on-Site.
- Due to the age of the building, there is a potential that asbestos containing materials are present.

600 National Avenue

612, 614, 616, 618 and 620 National Avenue[1] (600 National) was farmland from at least 1939 to 1956 and developed with the existing structure by 1964. 600 National has been occupied by various commercial office, warehouse and light industrial tenants since construction in 1964. Current occupants of the Site consist of Honda (612 National Avenue), Sigura Construction (614 National Avenue), Guide Tech (616 National Avenue), Minuteman Press (618 National Avenue) and Fun House Theatrical (620 National Avenue). On-Site operations consist of general office and warehousing uses, testing semiconductor equipment, and commercial printing. Three monitoring wells are used to evaluate ground water quality at 600 National (Figure 6).

Based on the Phase I ESA (Partner 2013), one REC was reported:

- 600 National is located in the MEW Superfund Study Area.

The Phase I ESA did not reveal historical RECs. However, the following environmental "issues" were noted:

- Due to the age of the building, there is a potential that asbestos containing materials are present.

[1] Collectively referred to as 600 National Avenue (600 National).

630 National Avenue

630 National Avenue (630 National) was farmland prior to 1956 and developed with the existing structure by the early 1960s. According to the city directory review, 630 National has been occupied by multiple industrial tenants including Testing and Controls Chemical Laboratory, Daytron, Inc., Shadan, Inc., Technitron, and Domo PCB, Inc.

Records from 1984 through 2010 indicated that Technitron, a printed circuit board manufacturer, occupied 630 National from 1984 until production ceased in 2008. According to Site plans, the facility included photo and imaging room, screening and imaging room, baking room, plating room, lamination room, drilling room, chemical storage room, a laboratory, and office area. Hazardous materials stored on-Site were classified by the City Fire Department (Fire Department) as various combustible liquids, corrosive liquids, corrosive solids, flammable gases, flammable liquids, miscellaneous liquids and solids, non-regulated liquids and solids, oxidizer liquids and solids. During Technitron's occupancy, various violations were noted including administrative, hazardous materials storage, fire safety, and employee training violations.

A Phase II soil quality investigation (1983) reportedly involved the collection of soil samples from three locations within the building. The samples were analyzed for VOCs and also for total chromium, chromium VI, lead, pH, and fluoride. TCE (up to 0.3 mg/kg), tetrachloroethylene (PCE – up to 0.137 mg/kg), and 1,1,1-trichloroethane (1,1,1-TCA – up to 0.0055 mg/kg) were detected in the soil samples. These concentrations were reported at less than the current Water Board Environmental Screening Levels (ESLs) and US EPA's Regional Screening Levels (RSLs) for residential land use. There are no California Human Health Screening Levels (CHHSLs) established for these VOCs in soil. Only one of the 11 lead results exceeded its CHHSL for residential use of 80 mg/kg. The 95% Upper Confidence Limit (UCL) performed on the lead results were estimated by others to yield a concentration less than the residential CHHSL because only one sample exceeded this concentration and the remaining results have much lower concentrations (28 mg/kg maximum). All the total chromium results from these samples were less than the residential CHHSL of 100,000 mg/kg (chromium III). All chromium VI and fluoride results were also less than the residential CHHSL of 17 mg/kg and 4,600 mg/kg, respectively.

When Technitron ceased operations at the Site in 2008, a formal facility closure was required and was overseen by the Fire Department because of the hazardous materials at 630 National. Processing units were decommissioned as part of the closure. Some evidence of staining was reported on the concrete where chemicals were stored. Between February 2008 and February 2009, production equipment, raw process chemicals and office furniture and supplies were transferred from 630 National to an off-Site facility.

Solutions of copper sulfate and other chemicals remained at 630 National for subsequent off-Site disposal. The wastewater treatment system remained operational during closure operations and was used to process the wastewater generated during the facility closure activities.

A walk-through Site assessment by Environmental Risk Specialties Corporation (ERS) as part of the facility closure activities resulted in a list of rooms within the building and their corresponding uses, hazardous materials stored and their disposition. All materials were removed and the rooms cleaned. In Room P-1 (Plating room), there was a below grade sump under the waste treatment walkway. The sump reportedly had heavy use and corrosion, chips and wear and tear of the concrete surface. The sump was emptied, cleaned, verification tested,

and then filled with gravel and capped with a concrete slab to bring it even with the surrounding floor area.

All liquids and sludges reportedly were removed from the facility. When facility closure was being completed, the majority of spent chemicals and floor water reportedly was treated in the on-Site waste water treatment system and discharged to the municipal sanitary sewer system. Chemicals that could not be treated reportedly were shipped off-Site for treatment and disposal. Solids were shipped off-Site for treatment and disposal. Equipment were cleaned then hauled off-Site for disposal, with the exception of the HVAC, electrical, and plumbing equipment, which was left on-Site for the new occupant. Secondary containment concrete berms were removed as hazardous waste solids. No USTs were reported to be located on-Site. The below grade sump in the plating areas was cleaned, tested, and filled with gravel and concrete as previously mentioned. The small amounts of free liquids in sumps, pits, and tanks (ASTs) were treated on-Site and disposed in the sanitary sewer system. No soil or ground water removal was required. Wipe samples were collected. Equipment was decontaminated and moved to the new facility or sold. To evaluate the sub-slab soils at the time of closure, 25 soil samples were collected from beneath the slab and tested for CAM 17 metals. The analytical data reportedly was less than residential CHHSLs.

ERS issued the closure report for Technitron (630 National) to the Fire Department on December 30, 2009. ERS also completed an addendum to the above Facility Closure Report addressing concerns raised by the Fire Department. On March 10, 2010, Mr. Chris Steck, Hazardous Materials Specialist with the Fire Department, issued a Letter of Facility Closure to Mr. John Papagni and Ms. Pamela Albion. The letter indicated that closure of Technitron (630 National) has been completed according to the guidelines established by the Fire Department.

A Phase II ESA was performed after facility closure, presumably for a potential property buyer, "366 Development LLC" (PSI, 2011). PSI advanced 16 soil borings to a maximum approximate depth of 5½ feet within the existing building. Select soil samples were analyzed for VOCs, pH, cyanide and cadmium, copper, lead, nickel, and zinc. For the VOCs, only TCE was detected in the soil samples exceeding the laboratory reporting limits. TCE was detected in four samples at concentrations ranging from 0.0072 mg/kg to 0.037 mg/kg. The maximum concentration detected was less than the residential ESL and RSL. Cyanide was detected in one of sample at a concentration of 0.6 mg/kg, which is less than the residential RSL (47 mg/kg).

With exception of arsenic and nickel, the concentrations of all the other metals detected reportedly appeared generally consistent with the naturally-occurring background concentrations in a published study for northern Santa Clara County (Scott, 1991). The metal concentrations were also less than their respective CHHSLs and RSLs for residential uses. For arsenic, naturally-occurring concentrations in the Bay Area typically exceed CHHSLs and RSLs, and regulatory agencies do not require remediation to levels below naturally-occurring concentrations. Nickel concentrations ranged from 27 mg/kg to 2,200 mg/kg, which exceeded the naturally occurring concentrations of 46.4 mg/kg to 100.7 mg/kg (Scott, 1991). This concentration was less than the commercial CHHSL (16,000 mg/kg), but it exceeded the direct exposure CHHSL for residential use of 1,600 mg/kg. However, a statistical analysis of the data set was performed by others to estimate the 95% Upper Confidence Limit of the arithmetic mean (UCL), which showed that the 95% UCL for nickel varies from 88.54 mg/kg to 654.94 mg/kg (less than the direct exposure CHHSL for residential use of 1,600 mg/kg).

Haley & Aldrich, Inc. (2011) conducted a walkthrough in the building; on this date the facility was occupied by Domo PCB, Inc. for circuit board assembly and offices. There were floor drains inside the bathrooms, household cleaners in the restroom and under the break room sink, and chemicals used in the circuit board manufacturing, such as photo developer. A discharge point to the sanitary sewer was located in the decommissioned plating shop. Haley & Aldrich collected 5 indoor and 1 outdoor air samples with the HVAC system on, and the same number of samples at the same locations with the HVAC system off. With the HVAC system on, PCE, cis-1,2-DCE, 1,1-DCA, and 1,1-DCE were detected below EPA's indoor air cleanup levels for long-term exposure. TCE was measured in indoor air at concentrations ranging from 0.92 to 11 $\mu g/m^3$. Two sampling locations (630AMB-1 and 630AMB-2) showed TCE above EPA's long-term cleanup level of 5 $\mu g/m^3$. With the HVAC system off, PCE, cis1,2-DCE, 1,1-DCE, and vinyl chloride were also below EPA's indoor air cleanup levels for long-term exposure. TCE was measured in indoor air at concentrations ranging from 0.94 to 7.3 $\mu g/m^3$. Two sampling locations (630AMB-1 and 630AMB-2) showed TCE above EPA's long-term indoor air cleanup level of 5 $\mu g/m^3$. TCE was not detected above the detection limit of 0.027 $\mu g/m^3$, in either outdoor air sample.

After receipt of the results, Haley & Aldrich coordinated another walkthrough on April 5, 2012 to perform a detailed inventory of indoor chemical use, collect ppbRAE measurements, and observe the building for potential conduits. No conduits were observed to penetrate the slab, although cracks were observed in several rooms. The average background concentration inside the building using the ppbRAE was approximately 20 to 50 ppb_v (where air sample 630AMB-1 and 630AMB-3 were located). Greater VOC concentrations were observed in the quality control room (140 to 170 ppb_v), the location of sample 630AMB-2. Negligible VOC concentrations were noted in the decommissioned plating shop (location of 630AMB-4). VOC concentrations spiked in the layout room (2,030 ppb_v), but no indoor air samples were collected in this room. None of the chemicals observed contained chlorinated VOCs.

McCloskey Consultants, Inc. (McCloskey) prepared a Preliminary Endangerment Assessment (PEA) on behalf of Odevco, Inc. to determine if conditions exist at the Site that could pose a risk to human health or the environment. The report was completed in response to a previously performed Phase I ESA by PSI and subsequent soil sampling performed by PSI in August 2011 to evaluate the subject property for potential residual soil contamination related to historical uses of the existing building. At the time of the assessment, 630 National was occupied by Domo PCB for the manufacturing of PC boards. Based on their research, McCloskey concluded that the only environmental concerns identified are possible indoor air impacts from solvents in ground water that originated from off-Site sources.

DTSC reviewed and approved the PEA in October 2013. In the approval letter, DTSC stated:

> *"Although no further action is required at the Site by DTSC, actions may be required by US EPA, pursuant to the ROD Amendment, to address the potential risk from VOCs migrating from the underlying groundwater into the indoor air of existing or future buildings.*
>
> *You have informed us that the Site is in the process of being sold, that the buyer plans to construct a new building, and that both you and the buyer are aware of the requirements for new building construction within the MEW Study Area that have put in place through the cooperative effort of the City of Mountain View and US EPA, specifically to address possible vapor intrusion into indoor air."*

Based on the Phase I ESA (Partner 2013), two RECs were reported:

- 630 National is located in the MEW Superfund Study Area.
- The Site is located with the US EPA Vapor Study Area and indoor air sampling has been performed that reportedly showed TCE concentrations above regulatory levels for indoor air.

The Phase I ESA revealed one historical REC:

- Technitron, a printed circuit board manufacturer, occupied 630 National from 1984 to 2008. Based on the PEA and the subsequent no further action status obtained from DTSC, the reported concentrations of chemicals detected in the subsurface were considered a historical REC.

The following environmental "issue" also was noted:

- Due to the age of the building, there is a potential that asbestos containing materials are present.

640 National Avenue

640 National Avenue (640 National) was farmland from at least 1939 to at least 1956 and developed with the existing structure by 1964. Baumbach Engineering Company (Baumbach) occupied 640 National since 1975. Baumbach utilized 640 National as a machine shop and for manufacturing of mold plastic products. The facility receives plastic pellets in 55-gallon drums, which were then placed in machines to mold various plastic products. During the Phase I ESA (Partner 2013), Mr. Chris Baumbach was interviewed and reportedly indicated that the facility operations have not significantly changed since 1975. The Phase I ESA Site visit provided no evidence of any above ground or underground storage tanks, and Mr. Baumbach reported that there were no underground or above ground storage tanks at 640 National. Minor surface staining was observed on the concrete floor in the machine shop, oil storage area and near the compressor. There was no evidence of any floor drains, significant cracking or other subsurface entry points in the areas of staining. In addition, the subject property is not identified as having had a spill or release of hazardous substances in the Environmental Data Resources, Inc. (EDR) regulatory database report. Based on this information, the former and current uses of 640 National for manufacturing purposes were not considered a REC in the Phase I ESA.

Based on the Phase I ESA (Partner 2013), one REC was reported:

- 640 National is located in the MEW Superfund Study Area.

The Phase I ESA did not reveal any historical RECs. However, the following environmental "issues" were noted:

- 640 National was used as a machine shop and for manufacturing of mold plastic products since approximately 1975.
- Due to the age of the building, there is a potential that asbestos containing materials are present.

Conclusions and Recommendations

Based on the above summary, Cornerstone Earth Group concludes and recommends the following:

- The Site is located in the MEW Superfund Study Area. US EPA is the lead regulatory agency responsible for directing the cleanup; the Water Board is the support regulatory agency. The Property Owner and Developer shall cooperate with US EPA, Water Board and MEW Companies for the on-going remediation/monitoring activities at the Site. The Site shall be developed in a manner that will allow complete access to the Site for continued remediation and monitoring activities by the MEW Companies.

- Ground water monitoring wells, extraction wells, conveyance piping, and grout curtain walls are located on-Site. Construction measures shall be implemented to protect these features during construction. US EPA, Water Board and MEW Companies shall be notified in writing of construction activities in these areas, and at a minimum, these areas shall be cordoned off using delineators and caution tape, or similar materials by the General Contractor. Upon completion of construction activities, the wells and piping shall be inspected by an Environmental Professional to determine if they have been damaged. If these on-Site features require decommissioning, the Property Owner and Developer shall obtain the written approval by US EPA, Water Board and/or the responsible MEW Companies; permits also may be required.

- US EPA has determined that there are potential health risks associated with long-term exposure to TCE and other MEW Site chemicals of concern through the vapor intrusion pathway in existing and future buildings overlying the shallow ground water contamination. US EPA's selected remedy to address the vapor intrusion pathway and to protect human health of building occupants in the Vapor Intrusion Study Area consists of the following:

  - For Future (New Construction) Buildings – Installation of a Vapor Barrier and Passive Sub-slab Ventilation System (With the Ability to be Made Active).

  - Implementation of Institutional Controls (ICs) and Monitoring to Ensure the Long-term Effectiveness of the remedy.

- The Developer shall provide a Vapor Mitigation Report with the Vapor Barrier and Passive Sub-slab Ventilation System plans and monitoring program to the City, US EPA and the Water Board for review and approval. The vapor control measures shall be also identified in the Site Management Plan (SMP), implemented as a part of the development plans.

- If a deep foundation system is planned, the foundation of the building shall incorporate measures to help reduce the potential for the downward migration of contaminated ground water. These measures shall be identified in the Geotechnical Investigation report and the Site Management Plan (SMP), implemented as a part of the development plans.

- A Land Use Covenant that restricts the development and use of the Site to industrial, commercial or office space shall be recorded at the County Assessor's Office. No residences, hospitals, schools for persons under 21 years of age, day care centers for

children, or day care centers for senior citizens shall be permitted. In addition, no owner or occupant shall aggravate or contribute to the existing hazardous materials in the soil and ground water at the Site.

- A Health and Safety Plan (HSP) shall be developed to establish appropriate protocols for working in contaminated materials. Workers conducting Site investigation and earthwork activities in areas of contamination shall complete a 40-hour HAZWOPER training course (29 CFR 1910.120 (e)), including respirator and personal protective equipment training. Each contractor will be responsible for the health and safety of their employees as well as for compliance with all applicable federal, state, and local laws and guidelines. This document shall be provided to the City, US EPA and Water Board for review.

- During demolition and construction activities, contaminated material may be encountered. A Site Management Plan (SMP) shall be prepared by an Environmental Professional to establish management practices for handling contaminated soil, soil vapor, ground water or other materials. This document shall be provided to the City, US EPA and Water Board for review and approval. The SMP shall include the protocols, means and methods to implement the following:

    - Site control procedures shall be described to control the flow of personnel, vehicles and materials in and out of the Site.

    - Prior to the start of any construction activity that involves below ground work (e.g., mass grading, foundation construction, excavating or utility trenching), information regarding Site risk management procedures (e.g., a copy of the SMP) will be provided to the Contractors for their review, and each Contractor shall provide such information to its Subcontractors.

    - Measures shall be described to minimize dust generation, storm water runoff and tracking of soil off-Site.

    - Demolition activities shall be performed in a manner to minimize airborne dust.

    - If excavation dewatering is required, protocols shall be prepared to evaluate water quality and discharge/disposal alternatives; the pumped water shall not be used for on-Site dust control or any other on-Site use. If long-term dewatering is required, the means and methods to extract, treat and dispose ground water also shall be presented.

    - Protocols for conducting earthwork activities in areas where impacted soil, soil vapor and/or ground water are present or suspected shall be provided. Worker training requirements, health and safety measures and soil handing procedures shall be described.

    - Decontamination procedures shall be established and implemented by the Contractor to reduce the potential for construction equipment and vehicles to release contaminated soil onto public roadways or other off-Site transfer.

    - Perimeter air monitoring shall be conducted at the Site during any activity the significantly disturbs Site soil (e.g., mass grading, foundation construction,

excavating or utility trenching) to document the effectiveness of dust control measures.

- Protocols to be implemented if buried structures, wells, debris, or unidentified areas of impacted soil are encountered during Site development activities.

- Protocols shall be prepared to characterize/profile soil suspected of being contaminated so that appropriate mitigation, disposal or reuse alternatives, if necessary, can be implemented. Soil in contact with ground water shall be assumed contaminated. All soil excavated and transported from this Site shall be appropriately disposed at a permitted facility.

- Stockpiling protocols shall be developed for "*clean*" and "*impacted*" soil.

- Procedures shall be developed to evaluate and document the quality of any soil imported to the Site. Soil containing chemicals exceeding residential (unrestricted use) screening levels or typical background concentrations of metals shall not be accepted.

- Methods to monitor excavations and trenches for the potential presence of VOC impacted vapors shall be presented.

- Methods to mitigate the potential for vapor intrusion of VOC vapors into the planned structure shall be described.

- Protocols shall be presented to evaluate if the residual contaminants will adversely impact the integrity of below ground utility lines and/or structures (e.g., the potential for corrosion).

- Appropriate measures shall be implemented to reduce soil vapor and ground water migration through trench backfill and utility conduits. Such measures shall include placement of low-permeability backfill "*plugs*" at specified intervals on-Site and at all locations where the utility trenches extend off-Site. In addition, utility conduits that are placed below ground water shall be installed with water-tight fittings to reduce the potential for ground water to migrate into the conduits.

- Because the Site is known to have pollutants with the potential for mobilization, the Civil Engineer shall design the bottom and sides of the vegetated swales and water features (if incorporated into the building design) to be lined with a minimum 10-mil heavy duty plastic to help prevent Site infiltration.

- Upon completion of construction activities, the Environmental Professional will prepare a report documenting compliance with the Site Management Plan; this report will be submitted to the City, US EPA and Water Board.

- The Developer's/Owner's Environmental Professional shall assist in the implementation of the SMP.

- A permit may be required for facility closure (i.e., demolition, removal, or abandonment) of any facility or portion of a facility (e.g., lab) where hazardous materials are used or

stored. The Property Owner and/or Developer shall contact the Fire Department to determine facility closure requirements prior to building demolition.

- Some components encountered as part of the building demolition waste stream may contain hazardous materials. Universal wastes, lubrication fluids and CFCs and HCFC's shall be removed before structural demolition begins. Materials that may result in possible risk to human health and the environment when improperly managed include lamps, thermostats, and light switches containing mercury; batteries from exit signs, emergency lights, and smoke alarms; lighting ballasts which contain PCBs; and lead pipes and roof vent flashings. Demolition waste such as fluorescent lamps, PCB ballasts, lead acid batteries, mercury thermostats, and lead flashings have special case-by-case requirements for generation, storage, transportation, and disposal. Before disposing of any demolition waste, the Owner, Developer and Demolition Contractor shall determine if the waste is hazardous and shall ensure proper disposal of waste materials.

- Significant quantities of asphalt concrete (AC) grindings, aggregate base (AB), and Portland Cement Concrete (PCC) will be generated during demolition activities. AC/AB grindings shall not be reused beneath building areas.

- Due to the age of the on-Site structures, building materials may contain asbestos. Because demolition of the buildings is planned, an asbestos survey is required by local authorities and/or National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines. NESHAP guidelines require the removal of potentially friable asbestos containing building materials prior to building demolition or renovation that may disturb these materials.

- The Consumer Product Safety Commission banned the use of lead as an additive in paint in 1978. Based on the age of the buildings, lead-based paint may be present. Because demolition is planned, the removal of lead-based paint isn't required if it is bonded to the building materials. However, if the lead-based paint is flaking, peeling, or blistering, it should be removed prior to demolition. In either case, applicable OSHA regulations must be followed; these include requirements for worker training, air monitoring and dust control, among others. Any debris or soil containing lead must be disposed appropriately.

- During the removal of the buildings' slabs, sumps and underground waste water piping, an Environmental Professional shall be present to observe soil conditions, to monitor vapors with a hand held meter, and to determine if additional soil sampling should be performed. If additional sampling is performed, a report documenting sampling activities (with Site plans and analytical data) shall be provided to the City, US EPA and the Water Board. If additional sampling is not recommended, the Environmental Professional shall provide a letter presenting their Site observations and conclusions (with rationale on why sampling is not recommended) to the City, US EPA and the Water Board.

- Upon completion of construction activities, a long-term Operation and Maintenance Plan shall be prepared to provide post-development practices for managing contaminated soil, soil vapor, ground water or other materials. This report shall be issued to the City, US EPA and Water Board.

Limitations

Cornerstone Earth Group performed this investigation to support David J. Powers & Associates in the evaluation of 401, 600, 630 and 640 National Avenue, Mountain View, California. Conclusions presented in this letter are based on selected, readily available information. This study is inherently limited because findings are developed based on information obtained from others. Cornerstone does not accept liability for deficiencies, errors, or misstatements that have resulted from inaccuracies in the publicly available information or from information published by others. Cornerstone reviewed and relied on the information presented in these reports and cannot be responsible for their accuracy. This letter, an instrument of professional service, was prepared for the sole use of David J. Powers & Associates and may not be reproduced or distributed without written authorization from Cornerstone. It is valid for 180 days. Cornerstone makes no warranty, expressed or implied, except that our services have been performed in accordance with the environmental principles generally accepted at this time and location.

Close

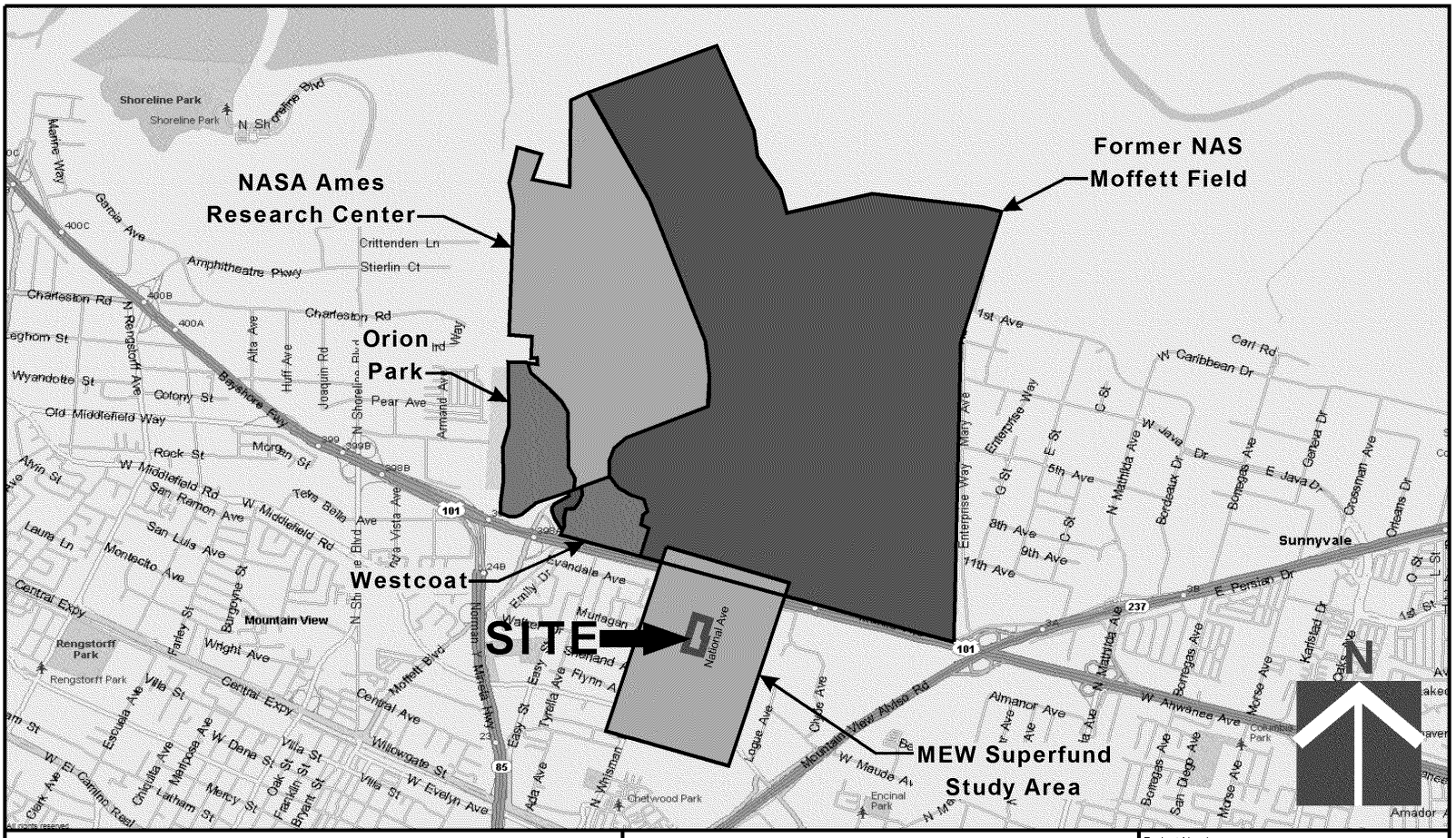
We thank you for this opportunity to work with you on this important development. Should you have any questions, please contact us at your convenience.

Sincerely,

Cornerstone Earth Group, Inc.

Draft

Ron L. Helm, C.E.G.
Senior Principal Geologist



CORNERSTONE EARTH GROUP	**Vicinity Map** **401, 600, 630 and 640 National Avenue** **Mountain View, CA**	Project Number: 118-49-1 Figure Number: Figure 1 Date: November 2013 Drawn By: RRN

EPA-R9-2017-003246_0001653

Base by Google Earth, dated 9/26/2011

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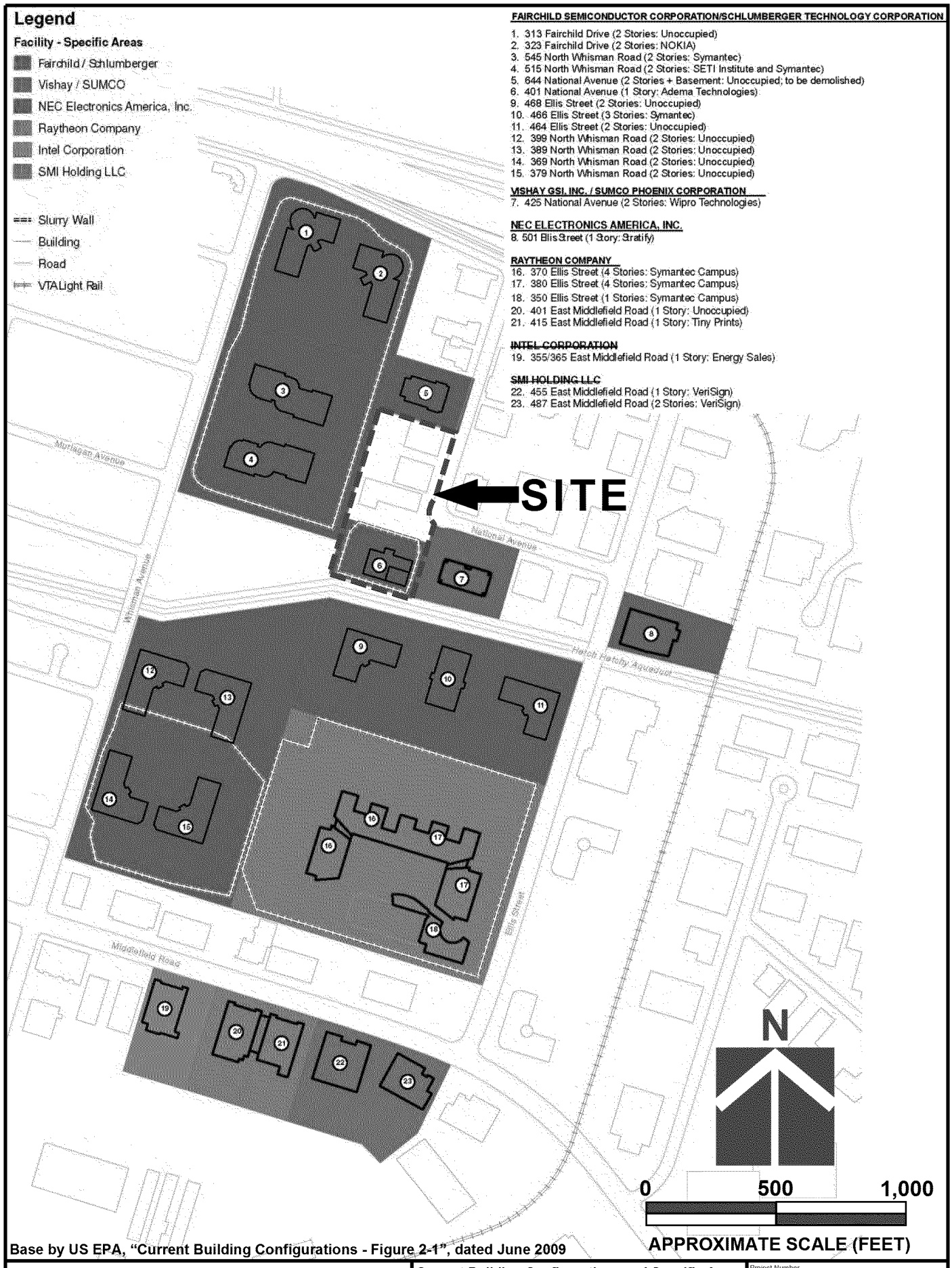
Site Map

401, 600, 630 and 640 National Avenue
Mountain View, CA

Project Number	118-49-1
Figure Number	Figure 2
Date	November 2013
Drawn By	RRN

EPA-R9-2017-003246_0001654



Base by US EPA, "Current Building Configurations - Figure 2-1", dated June 2009

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Current Building Configurations and Specific Areas

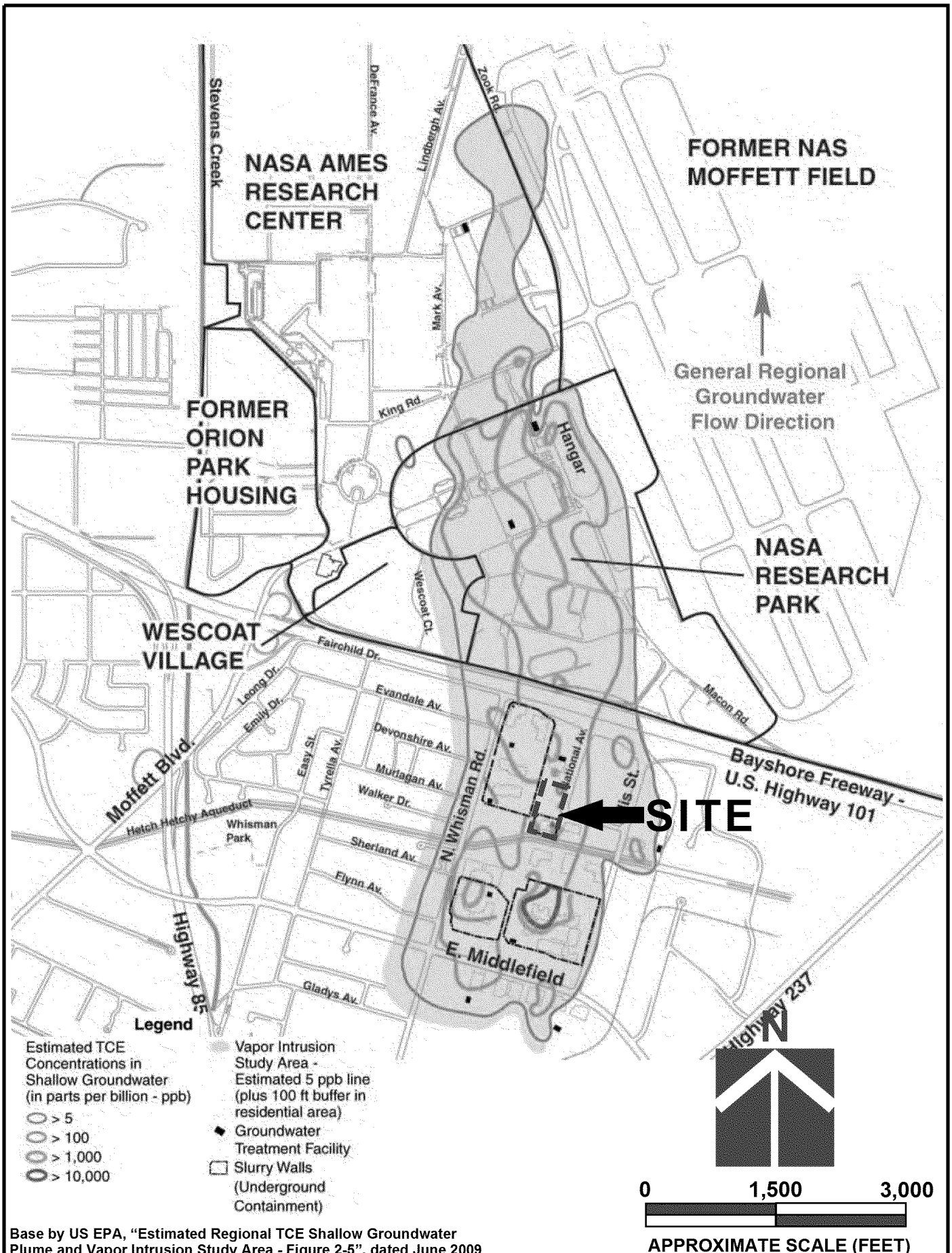
401, 600, 630 and 640 National Avenue
Mountain View, CA

Project Number: 118-49-1

Figure Number: Figure 3

Date: November 2013

Drawn By: RRN



Base by US EPA, "Estimated Regional TCE Shallow Groundwater Plume and Vapor Intrusion Study Area - Figure 2-5", dated June 2009

CORNERSTONE EARTH GROUP

Estimated Regional TCE Shallow Ground Water Contamination and Vapor Intrusion Study Area

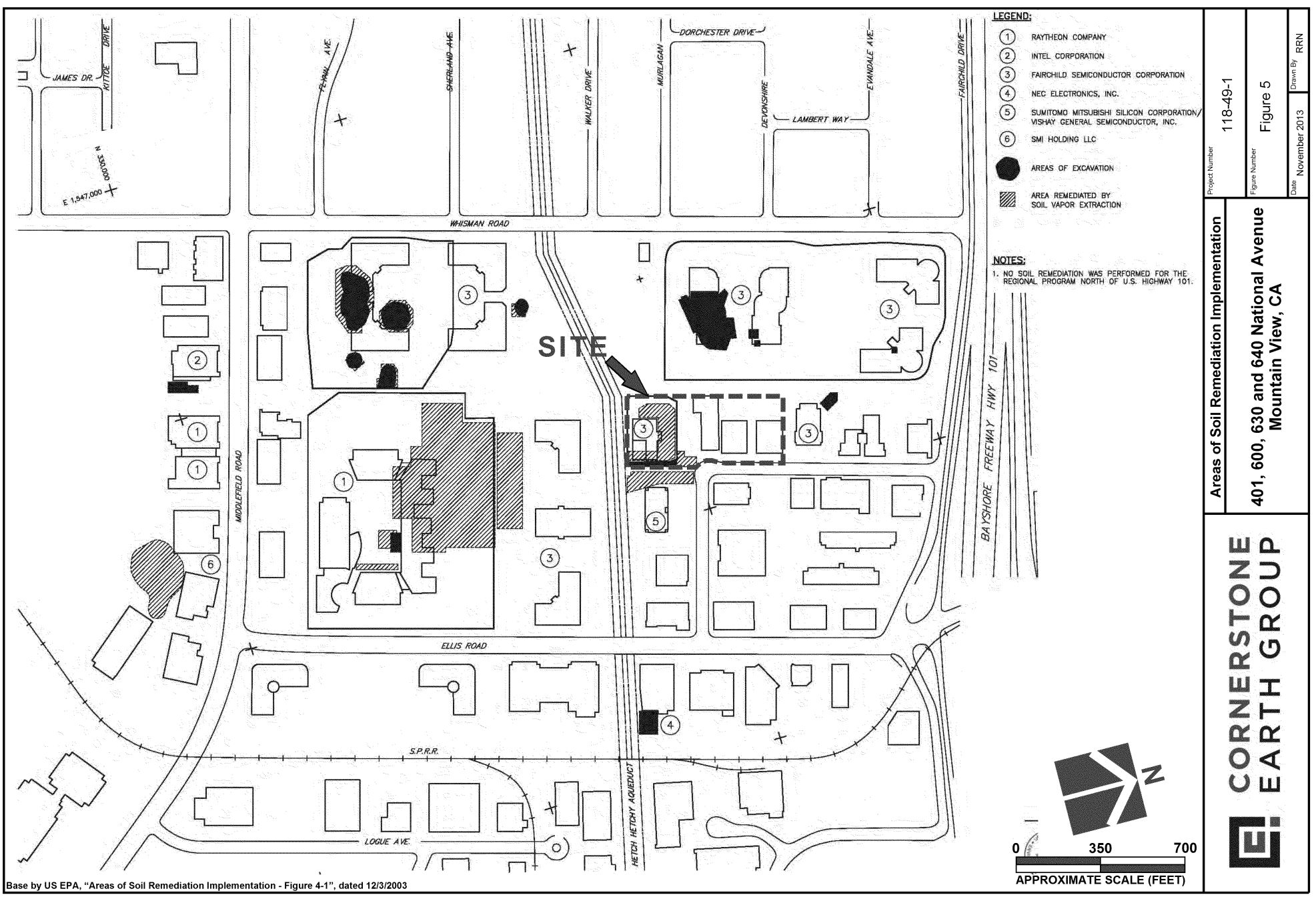
401, 600, 630 and 640 National Avenue Mountain View, CA

Project Number: 118-49-1

Figure Number: Figure 4

Date: November 2013

Drawn By: RRN


JAMES DR.
KITTOE DRIVE
N 330,000
E 1,547,000
WHISMAN ROAD
TE YAN AVE.
SHERLAND AVE.
WALKER DRIVE
MURLAGAN
DORCHESTER DRIVE
DEVONSHIRE
LAMBERT WAY
EVANDALE AVE.
FAIRCHILD DRIVE
SITE
MIDDLEFIELD ROAD
BAYSHORE FREEWAY HWY 101
ELLIS ROAD
S.P.R.R.
HETCH HETCHY AQUEDUCT
LOGUE AVE.
LEGEND:
1 RAYTHEON COMPANY
2 INTEL CORPORATION
3 FAIRCHILD SEMICONDUCTOR CORPORATION
4 NEC ELECTRONICS, INC.
5 SUMITOMO MITSUBISHI SILICON CORPORATION/ VISHAY GENERAL SEMICONDUCTOR, INC.
6 SMI HOLDING LLC
AREAS OF EXCAVATION
AREA REMEDIATED BY SOIL VAPOR EXTRACTION
NOTES:
1. NO SOIL REMEDIATION WAS PERFORMED FOR THE REGIONAL PROGRAM NORTH OF U.S. HIGHWAY 101.
N
0
350
700
APPROXIMATE SCALE (FEET)
Base by US EPA, "Areas of Soil Remediation Implementation - Figure 4-1", dated 12/3/2003
Areas of Soil Remediation Implementation
401, 600, 630 and 640 National Avenue
Mountain View, CA
Project Number 118-49-1
Figure Number Figure 5
Date November 2013
Drawn By RRN
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Legend

- Active monitoring well
- Destroyed monitoring well
- Source control recovery well
- Destroyed source control recovery well

Base by Google Earth, dated 9/26/2011

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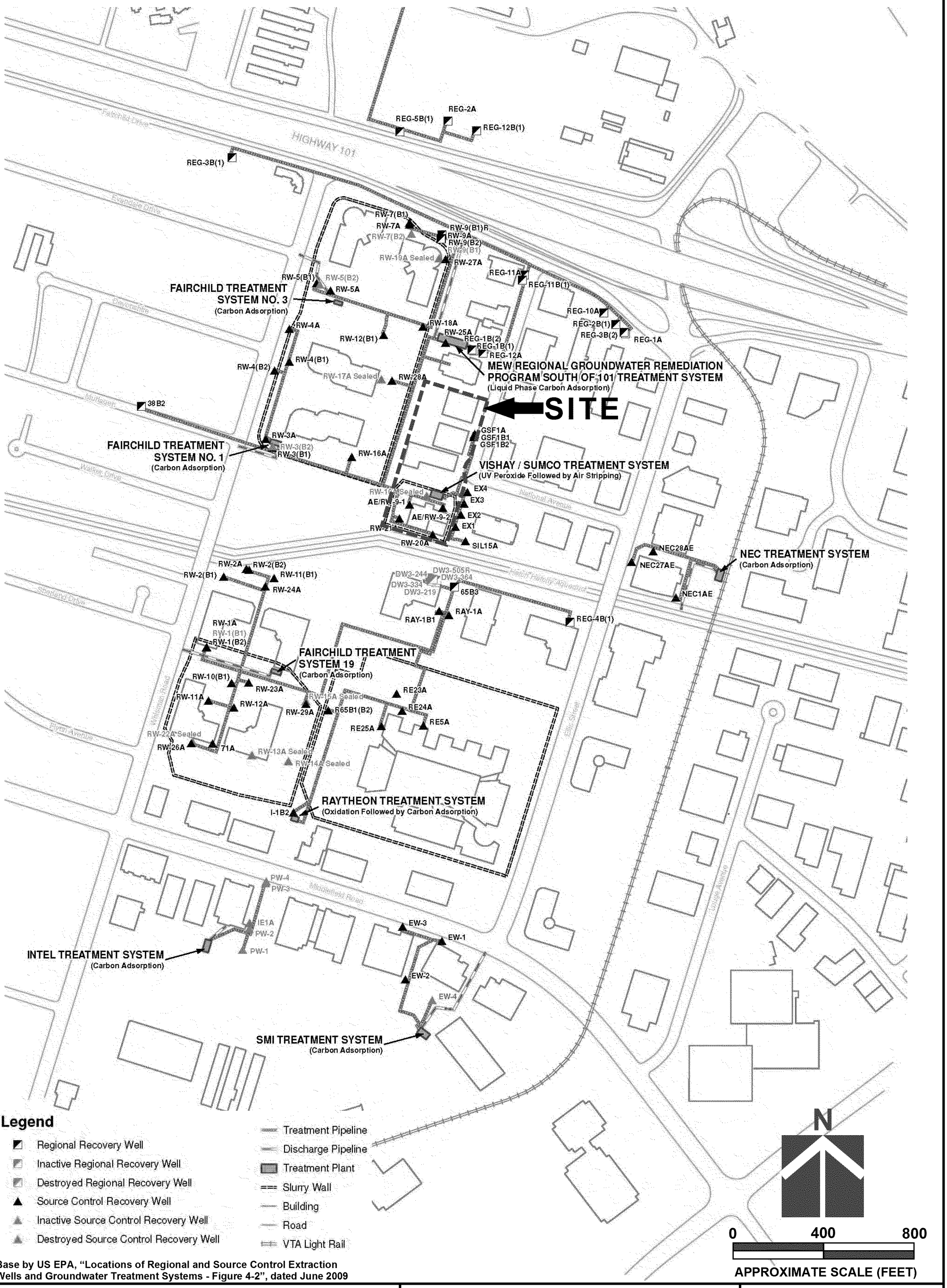
Monitoring Well Basemap

401, 600, 630 and 640 National Avenue
Mountain View, CA

Project Number	118-49-1
Figure Number	Figure 6
Date	November 2013
Drawn By	RRN

EPA-R9-2017-003246_0001658



Base by US EPA, "Locations of Regional and Source Control Extraction Wells and Groundwater Treatment Systems - Figure 4-2", dated June 2009

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Locations of Regional and Source Control Extraction Wells and Ground Water Treatment Systems

401, 600, 630 and 640 National Avenue Mountain View, CA

Project Number: 118-49-1

Figure Number: Figure 7

Date: November 2013

Drawn By: RRN